CLAIMS

1. (original) A mask suitable for protecting a portion of a substrate surface against diffusion coating of the substrate by metallic vapours during a pack or vapour coating process which mask comprises a composite material containing silica and an inert refractory diluent and a metal or metal alloy, wherein the metal or metal alloy is one which is capable of reacting with silicon thereby preventing siliconisation of the substrate with silicon from the composite material under conditions of diffusion coating and which is capable of reacting with the metal being applied by diffusion coating thereby preventing diffusion coating of the portion of the substrate surface it is desired to protect.

2. (original) A mask according to claim 1, wherein the metal or metal alloy is present in the composite material in an amount of 5 to 50% by weight based on the total weight of the mask.

3. (currently amended) A mask according to claim 2, wherein the metal or metal alloy is present in the ~~ceramic~~ composite material in an amount of 10 to 20% by weight based on the total weight of the mask.

4. (currently amended) A mask according to claim 2, wherein the metal in the mask is selected from nickel, cobalt, chromium, molybdenum and tungsten.

5. (currently amended) A mask according to claim 4, wherein the metal in the mask is nickel.

6. (previously amended) A mask according to claim 2, wherein the metal alloy is an alloy based on a combination of metals selected from nickel, cobalt, chromium, aluminium, molybdenum, tungsten, vanadium, tantalum, titanium and hafnium.

7. (original) A mask according to claim 6, wherein the metal alloy is a nickel-chromium alloy.

8. (previously amended) A mask according to claim 2, wherein the inert refractory diluent comprises alumina, aluminosilicate or feldspar.

9. (original) A mask according to claim 8, wherein the composite material comprises an aluminosilicate ceramic.

10. (previously amended) A mask according to claim 5, which comprises from 10 to 20% by weight nickel dispersed in an aluminosilicate ceramic matrix.

11. (previously amended) A mask according to claim 1 in the form of a diffusion coating cap.

12. (previously amended) A process for preparing a mask as defined in claim 1, which process comprises mixing the metal or metal alloy with a ceramic material containing silica and an inert refractory diluent material, shaping the resultant mixture into a desired configuration to form a blank, and then either:

(a) firing the blank in a reducing atmosphere to prevent oxidation of the metal or metal alloy; or

(b) firing the blank in an oxidising atmosphere followed by treatment in a reducing atmosphere to reduce the metal or metal alloy.

13. (original) A process according to claim 12, wherein the blank is in the shape of a cap.

14. (previously amended) A process according to claim 12, wherein in (a) the blank is fired at a temperature of from 1150 to 1300°C for from 30 minutes to 3 hours at temperature.

15. (previously amended) A process according to claim 12, wherein in (b) the blank is fired in an oxidising atmosphere at a temperature of from 1150 to 1300°C for from 30 minutes to 3 hours at temperature followed by treatment in a reducing atmosphere at a temperature of from 900 to 1200°C for a period of at least 1 hour.

16. (previously amended) A process for diffusion coating with a metal a selected portion of a substrate surface, which process comprises masking the substrate surface except for the portion to be coated with a mask as defined in claim 1, subjecting the substrate to diffusion coating with the metallic vapour, and removing the mask from the substrate surface.

17. (original) A process according to claim 16, wherein the metal which is being applied by diffusion coating is aluminium or chromium.

18. (previously amended) A process according to claim 16, wherein the substrate is a turbine blade and the portion of the blade protected against diffusion coating is the blade root.

19. (cancelled)

20. (cancelled)

21. (cancelled)

22. (cancelled)

23. (cancelled)

24. (cancelled)

25. (cancelled)

26. (cancelled)

27. (new) A mask according to Claim 2, wherein the silica is present in the composite material excluding the metal or metal alloy in an amount of at least 5% by weight.

28. (new) A mask according to Claim 2, wherein the silica is present in the composite material excluding the metal or metal alloy in an amount of from 10 to 15% by weight.